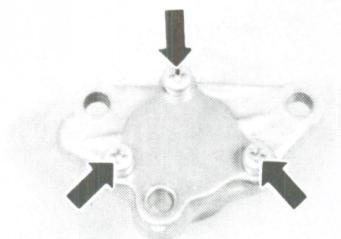
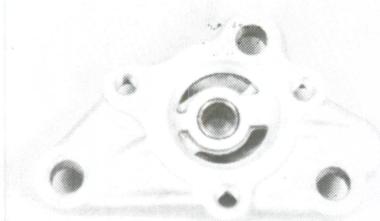


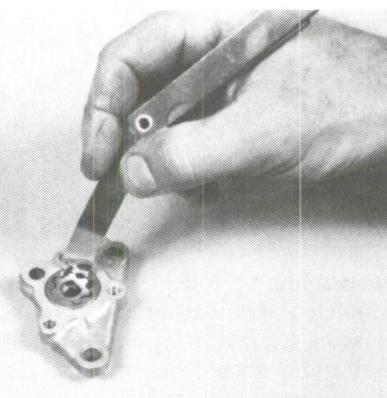
(105)



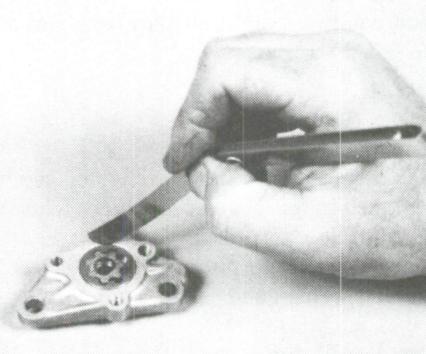
(106)



(107)



(108)



10. Install the rotor shaft. Align the flat of the shaft with the flat of the inner rotor (Figure 109).
11. Install a new gasket (Figure 110).
12. Install the cover and screws and tighten the screws securely.

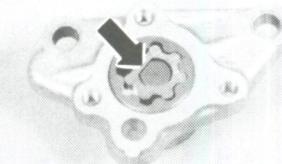
#### LEFT-HAND CRANKCASE COVER (ATC90 AND ATC110)

This cover is not used on the ATC70 because that model is not equipped with a subtransmission. For ATC125M models, refer to *Electric Starter Gears and Left-Hand Crankcase Cover Spacer Removal/Installation* in this chapter.

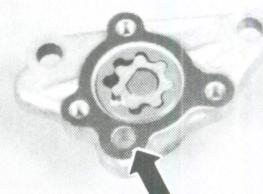
##### Removal/Installation

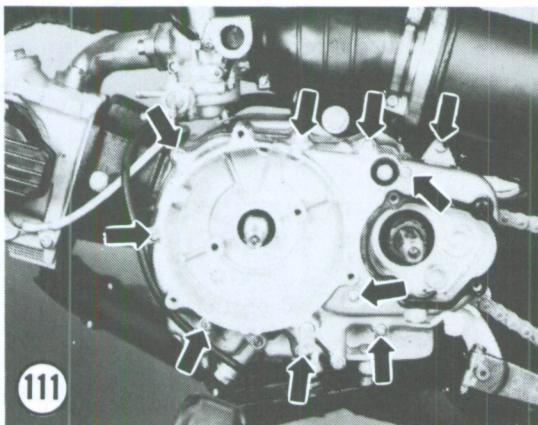
1. Drain the engine oil as described in Chapter Three.
2. Remove the subtransmission as described in Chapter Five.
3. Remove the recoil starter and the alternator as described in Chapter Seven.

(109)



(110)





4. Remove the E-clip on the neutral indicator and remove the neutral indicator.
5. Remove the bolts (Figure 111) securing the left-hand crankcase cover and remove the cover and the gasket. Don't lose the locating dowels.
6. Remove the drive chain sprocket (Figure 112) and, on models so equipped, the bushing(s).
7. Install by reversing these removal steps, noting the following.
8. Install a new gasket and reinstall the locating dowels.
9. Position the neutral indicator shaft so the flats are horizontal.
10. The neutral indicator must be pointed toward the arrow (Figure 113) on the cover or the cover will not fit on properly.

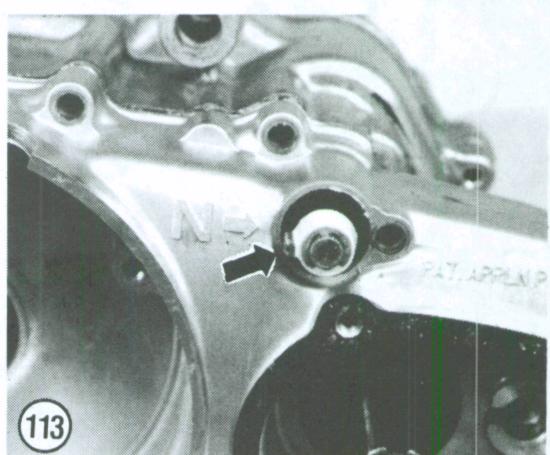
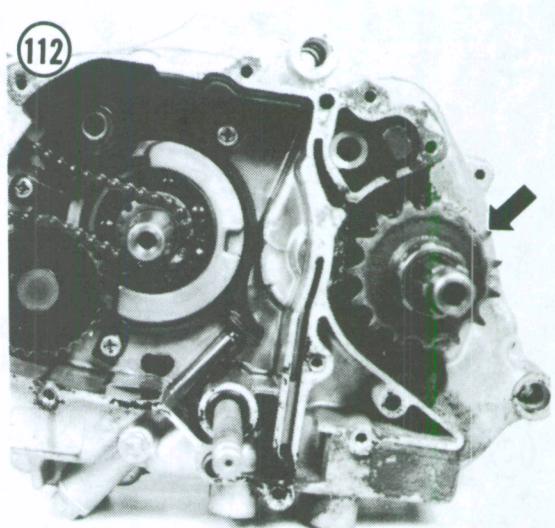
### CRANKCASE AND CRANKSHAFT

Disassembly of the crankcase (splitting the cases) and removal of the crankshaft assembly require that the engine be removed from the frame.

The crankcase is made in 2 halves of precision diecast aluminum alloy and is of the "thin-walled" type. To avoid damage, do not hammer or pry on any of the interior or exterior projected walls. These areas are easily damaged. The cases are assembled with a gasket between the 2 halves and dowel pins align the halves when they are bolted together.

The crankshaft assembly is made up of 2 full-circle flywheels pressed together on a hollow crankpin. The connecting rod big end bearing on the crankpin is a needle bearing assembly. The crankshaft assembly is supported in 2 ball bearings in the crankcase. Service to the crankshaft assembly is limited to removal and replacement.

The procedure which follows is presented as a complete, step-by-step, major lower end rebuild



that should be followed if an engine is to be completely reconditioned. However, if you're replacing a part that you know is defective, the disassembly should be carried out only until the failed part is accessible; there is no need to disassemble the engine beyond that point so long as you know the remaining components are in good condition and that they were not affected by the failed part.

### Crankcase Disassembly

1. Remove all exterior engine assemblies as described in this chapter and other related chapters:
  - a. Cylinder head.
  - b. Cylinder and piston.
  - c. Cam chain and cam chain tensioner assembly.
  - d. Clutch assembly.
  - e. Recoil starter.

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